

Claims

1. Pressure-sensitive adhesive based on polyurethane, characterized in that the polyurethane is composed of the following starting materials which are reacted with one another in the stated proportions:
 - a) at least one aliphatic or alicyclic diisocyanate having in each case an asymmetrical molecular structure,
 - b) a combination of at least one polypropylene glycol diol and at least one polypropylene glycol triol,
the ratio of the number of hydroxyl groups in the diol component to the number of hydroxyl groups in the triol component being between 0.7 and 9.0, preferably between 1.5 and 2.5,
additionally the ratio of the number of isocyanate groups to the total number of hydroxyl groups being between 0.9 and 1.1, preferably between 0.95 and 1.05,
and the diols and triols alternatively being selected and combined in each case as follows:
 - diols having a molecular weight of less than or equal to 1000 are combined with triols whose molecular weight is greater than 1000, preferably greater than or equal to 3000,
 - diols having a molecular weight of greater than 1000 are combined with triols whose molecular weight is less than 1000.
2. Pressure-sensitive adhesive according to Claim 1, characterized in that the diisocyanate is 1-isocyanatomethyl-3-isocyanato-1,5,5-trimethylcyclohexane (isophorone diisocyanate), 1-methyl-2,4-diisocyanatocyclohexane, 1,6-diisocyanato-2,2,4-trimethylhexane, 1,6-diisocyanato-2,4,4-trimethylhexane, 5-isocyanato-1-(2-isocyanatoeth-1-yl)-1,3,3-trimethylcyclohexane, 5-isocyanato-1-(3-isocyanatoprop-1-yl)-1,3,3-trimethylcyclohexane, 5-isocyanato-1-(4-isocyanatobut-1-yl)-1,3,3-trimethylcyclohexane, 1-isocyanato-2-(3-isocyanatoprop-1-yl)cyclohexane, 1-isocyanato-2-(2-isocyanatoeth-1-yl)cyclohexane, dicyclohexylmethane 2,4'-diisocyanate, 2-heptyl-3,4-bis(9-isocyanatononyl)-1-pentylcyclohexane, ethylethylene diisocyanate, 2,2,4-trimethylhexamethylene diisocyanate or a chlorinated, brominated, sulphur-containing or phosphorus-

containing diisocyanate having an asymmetrical molecular structure, preferably isophorone diisocyanate.

3. Pressure-sensitive adhesive according to Claim 1 or 2, characterized in that
5 formulating ingredients, such as catalysts, ageing inhibitors (antioxidants), light stabilizers, UV absorbers, rheological additives, and also other auxiliaries and additives, are admixed.

4. Process for preparing a pressure-sensitive adhesive according to at least one of
10 the preceding claims, where

a) a vessel A is charged substantially with the premixed polypropylene glycol combination (polyol component) and a vessel B is charged substantially with the isocyanate component, it being possible for the further formulating ingredients further to have been mixed into these components beforehand in a standard mixing procedure,

b) the polyol component and the isocyanate component are conveyed via precision pumps through the mixing head or mixing tube of a multi-component mixing and metering unit, where they are homogeneously mixed and consequently reacted,

c) the chemically inter-reactive components mixed in this way are applied immediately thereafter to a web-form backing material which is preferably moving at a constant speed,

d) the backing material coated with the reactive polyurethane composition is passed through a heating tunnel in which the polyurethane composition cures to give the pressure-sensitive adhesive,

e) finally the coated backing material is wound up in a winding station.

5. Process for preparing a pressure-sensitive adhesive according to at least one of
30 the preceding claims, characterized in that the preparation takes place without solvent.

6. Process for preparing a pressure-sensitive adhesive according to at least one of the preceding claims, characterized in that the preparation takes place without addition of water.

7. Use of a pressure-sensitive adhesive according to at least one of the preceding claims for producing self-adhesive articles.

8. Use of a pressure-sensitive adhesive according to at least one of the preceding claims for fixing notes, sheets of paper, calendar pages, strips, cards or boxes made of paperboard, cardboard or plastic, or small utility articles made of plastic, wood, glass, stone or metal.